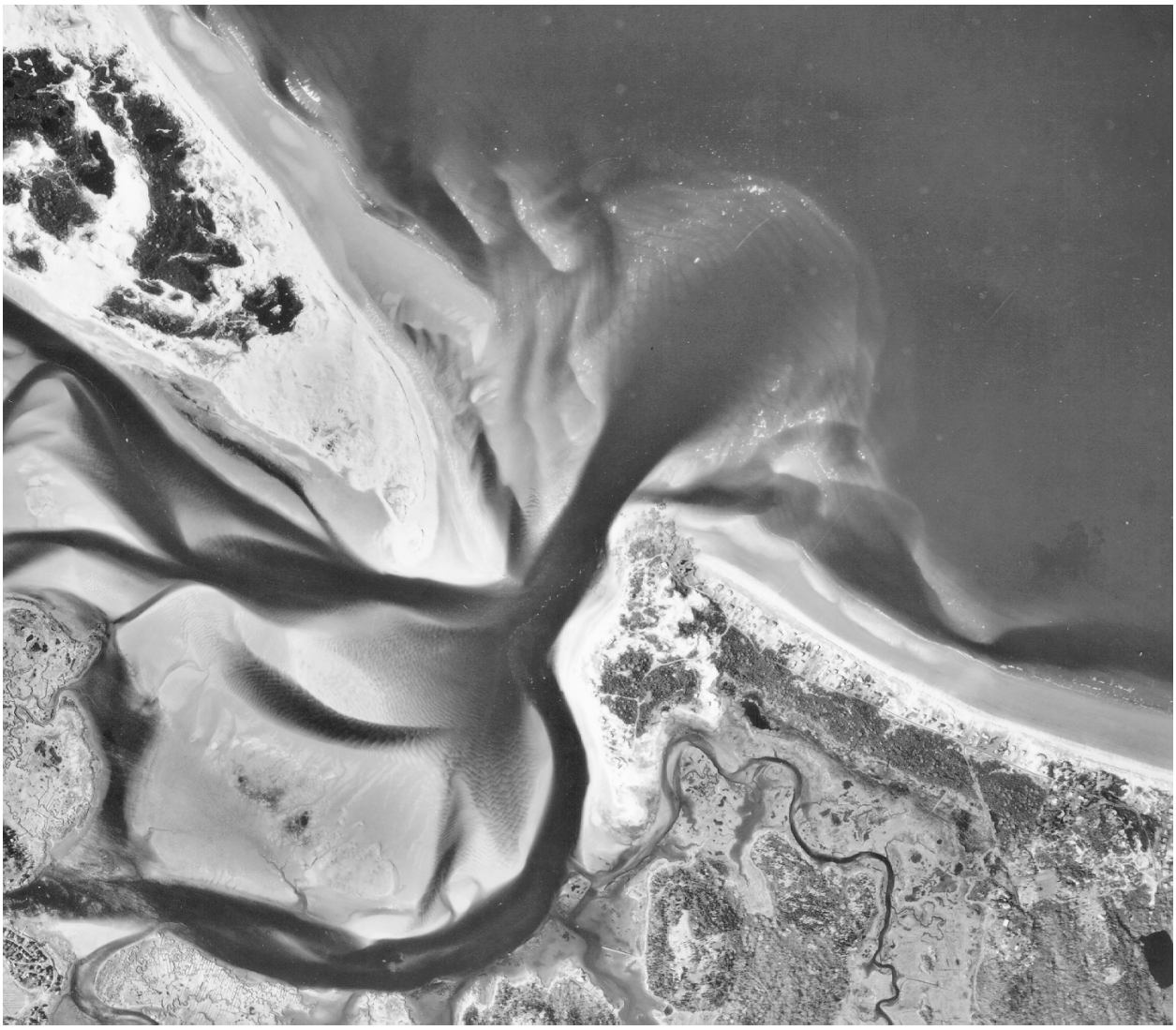

Figure IV-3-11. Mouth of the Essex River, Massachusetts (23 April 1978). This delta is Class II, high tide and low wave energy, or possibly Class III, intermediate wave and high tide. This river mouth is anchored on the south by rock outcrops. Formerly, there may have been more open water in the back bays, and the morphology would have resembled an inlet in a barrier spit

delta, significant sand accumulates in the interdistributory region when breaks in the levees occur, allowing river water to temporarily escape from the main channel. These accumulations are called *crevasse splays*.

(2) The subaqueous plain is the foundation over which the modern delta progrades (as long as the river occupies the existing course and continues to supply sufficient sediment). The subaqueous plain is characterized by a seaward-fining of sediments, with sand being deposited near the river mouths and clays settling further offshore. The seawardmost unit of the plain is the prodelta. It overlies the sediments of the inner continental shelf and consists of a blanket of clays deposited from suspension. The prodelta of the Mississippi ranges from 20 to 50 m thick and extends seaward to water depths of 70 m. The Mississippi's prodelta contains pods of distributory mouth bar sands and their associated cross bedding, flow structures, and shallow-water fauna. These pods may be slump blocks carried down to the prodelta by submarine landslides (Prior and Coleman 1979). Slumping and mudflow are mechanisms that transport large masses of sediment down to the edge of the continental slope and possibly beyond. These mass movements are a